

# Performance and Durability of the Window-Wall Interface

Barry G. Hardman  
Carl R. Wagus  
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Editors

**STP 1484**



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*Barry G. Hardman, Carl R. Wagus, and Theresa A. Weston, editors*

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# Foreword

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This publication, *Performance and Durability of the Window-Wall Interface*, includes peer reviewed papers presented at the ASTM E06 Symposium by this same name in April of 2004. The symposium, held in Salt Lake City, Utah on April 18, 2004, focused on gathering much-needed window-wall interface information, which was not previously available through the private sector. The papers submitted reveal product testing and the testing of installation methods and techniques. The symposium chairman was Barry G. Hardman from the National Building Science Corporation, and the symposium co-chairs were Carl R. Wagus with Pittco Architectural Metals, and Theresa A. Weston with DuPont Nonwovens.



# Contents

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<b>Overview—B. G. HARDMAN, C. R. WAGUS, AND T. A. WESTON</b>	vii
<b>MATERIALS</b>	
<b>Water Resistance and Durability of Weather-Resistive Barriers—T. A. WESTON, X. PASCUAL, AND K. BOONE</b>	3
<b>Water Resistance and Vapor Permeance of Weather Resistive Barriers—T. K. BUTT</b>	19
<b>Adhesive Characterization &amp; Durability of Self-Adhered Flashings—J. D. Katsaros</b>	34
<b>INSTALLATION</b>	
<b>Designing and Specifying Self-Adhering Flashings for the Window-Wall Interface—R. BATEMAN</b>	53
<b>Effect of Installation Details on the Condensation Performance of Window Frames—R. J. KUDDER, S. K. BABICH, AND D. K. JOHNSON</b>	82
<b>Review of Specific Local Fenestration Units, Building Envelope Interface Practices, and Materials Compared to ASTM E2112, Current Acceptance Criteria and Evaluation Practices—D. S. ACKERMAN</b>	99
<b>The Importance of Integrating Flashing and the Water Resistive Barrier in the Exterior Wall Systems of Residential Buildings—L. DORIN</b>	118
<b>EVALUATION AND TESTING</b>	
<b>Durability Testing of Polyurethane Foam Sealant in the Window-Wall Interface—R. G. BRAUN AND J. GARCIA</b>	127
<b>Performance Testing of Flashing Installation Methods for Brick Mold and Nonflanged Windows—B. J. CROWDER-MOORE, T. A. WESTON, AND J. D. KATSAROS</b>	133
<b>A Review of Climate Loads Relevant to Assessing the Watertightness Performance of Walls, Windows, and Wall-Window Interfaces—S. M. CORNICK AND M. A. LACASSE</b>	153



# Overview

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This standard technical publication represents peer-reviewed white papers presented during the forum entitled “Performance and Durability of the Window-Wall Interface”, held in Salt Lake City on April 18, 2004. This is a first attempt to gather much-needed window-wall interface information that has been previously unavailable through the private sector. The white papers included in this STP give a broad picture of current techniques and technology to solve an otherwise difficult integration problem facing building construction practitioners.

During the late 1980s and early 1990s, and prompted by a need to save energy, many organizations were formed, including NFRC. NFRC took on the task of rating windows for thermal performance, but it became apparent that installation into the envelope affected the performance.

The changes in materials and techniques during the past few decades have produced some problems that appear to be newly observed by the building industry. Those problems appear to be generated from moisture and liquid water entering the walls through a variety of interfaces surrounding fenestration installations.

The E06.51.11 task group developed *E 2112 Standard Practice for Installation of Exterior Windows, Doors, and Skylights*. Once E 2112 was developed, it became apparent that there was little or no publicly available data on housewrap or flashings, and since the integration of the fenestration and the envelope is paramount, our task group has shifted gears to investigate and make available all the data that is important, to enable the user to make choices.

STP 1484 offers viewpoints and testimony from the private sector, which includes new research, exhaustive testing, and the creation of installation standards that attempt to identify installation methods and construction sequencing, to integrate a variety of fenestration products into a variety of wall claddings. Interface issues include:

- Integration of windows or doors with their related interfaces—flashings, sealants, claddings, and membranes, just to mention a few.
- Considerations of weather, exposure, job site conditions;
- Changing of installation methods based on the constant innovation of changing materials from the 1950s or post-World War II through the present;
- Compatibility or incompatibility of adjacent and integrated materials;
- A variety of separate trades who work on the window-wall interface area without coordination with each other;
- The roles of the architects, builders, and the various trades responsible for the installation of these fenestration products.



Many of the submitted papers reveal product testing and the testing of installation methods and techniques. In some cases, the reader will be introduced to the importance of drying in walls and the role that permeability plays in the selection of materials. There are papers that supply detailed information on the ability or inability of self-adhered materials to maintain their original adhesion properties and their long-term serviceability and durability.

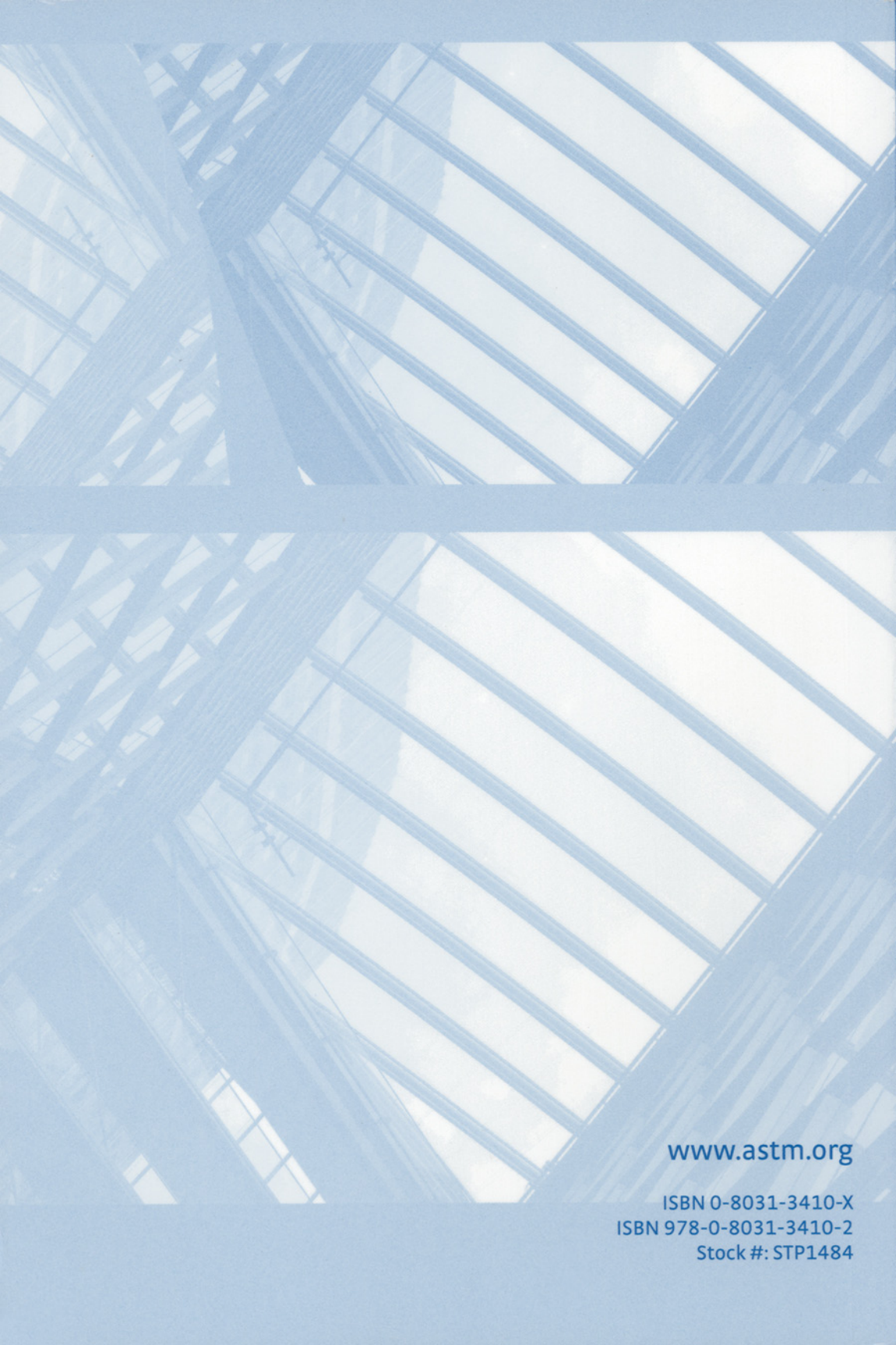
Readers can obtain vital information that will help them write specifications, create or interpret standards, evaluate materials for product selection, or recommend changes to the building codes.

As mentioned earlier, this is a first symposium in this area, and it is the intent of this task group, ASTM E06.51.11 Fenestration Installation, to present a second symposium in Tampa, Florida in October, 2007, entitled "Up Against the Wall." Ultimately, we would like to achieve a matrix of information, based on peer-reviewed papers with published test data, that will allow the user to compare and select installation methods and materials for performance under different conditions; this data will be useful to the architect, specifier, installer, and building owner. We encourage testing and publication of data on alternate installation methods and new materials.

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